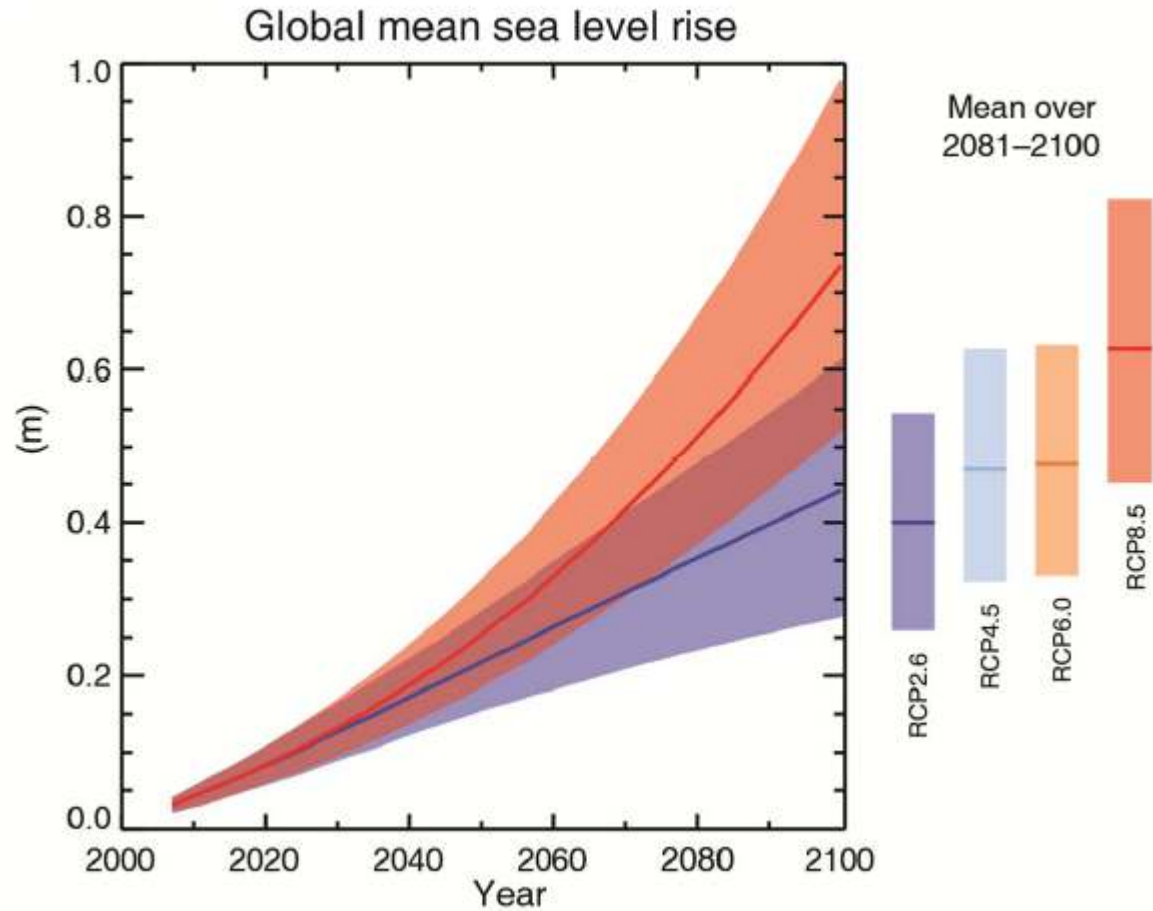


The Difficulties of Designing Future Coastlines in the Face of Climate Change

Tim O'Riordan

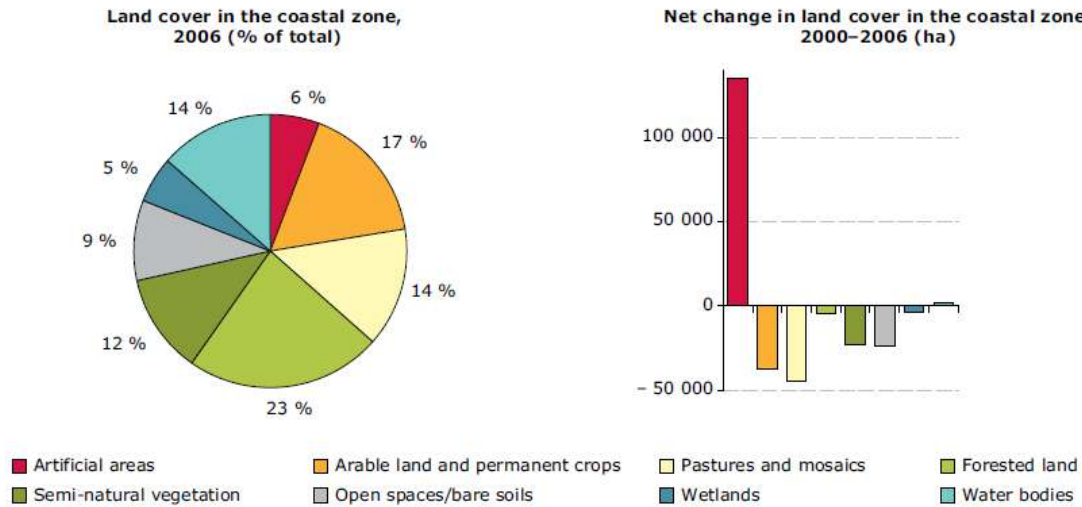
University of East Anglia

Landscape Institute, 5th December 2013



Source: IPCC (2013), AR5 (WG1), Summary for Policy Makers

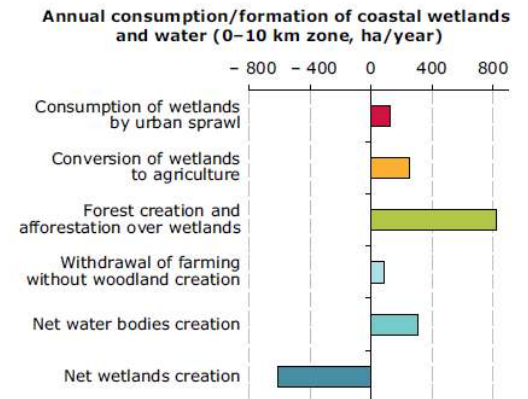
Figure 2.3 Land cover 2006 (left), and net change in land cover 2000–2006 (right) in coastal zones of 22 coastal countries



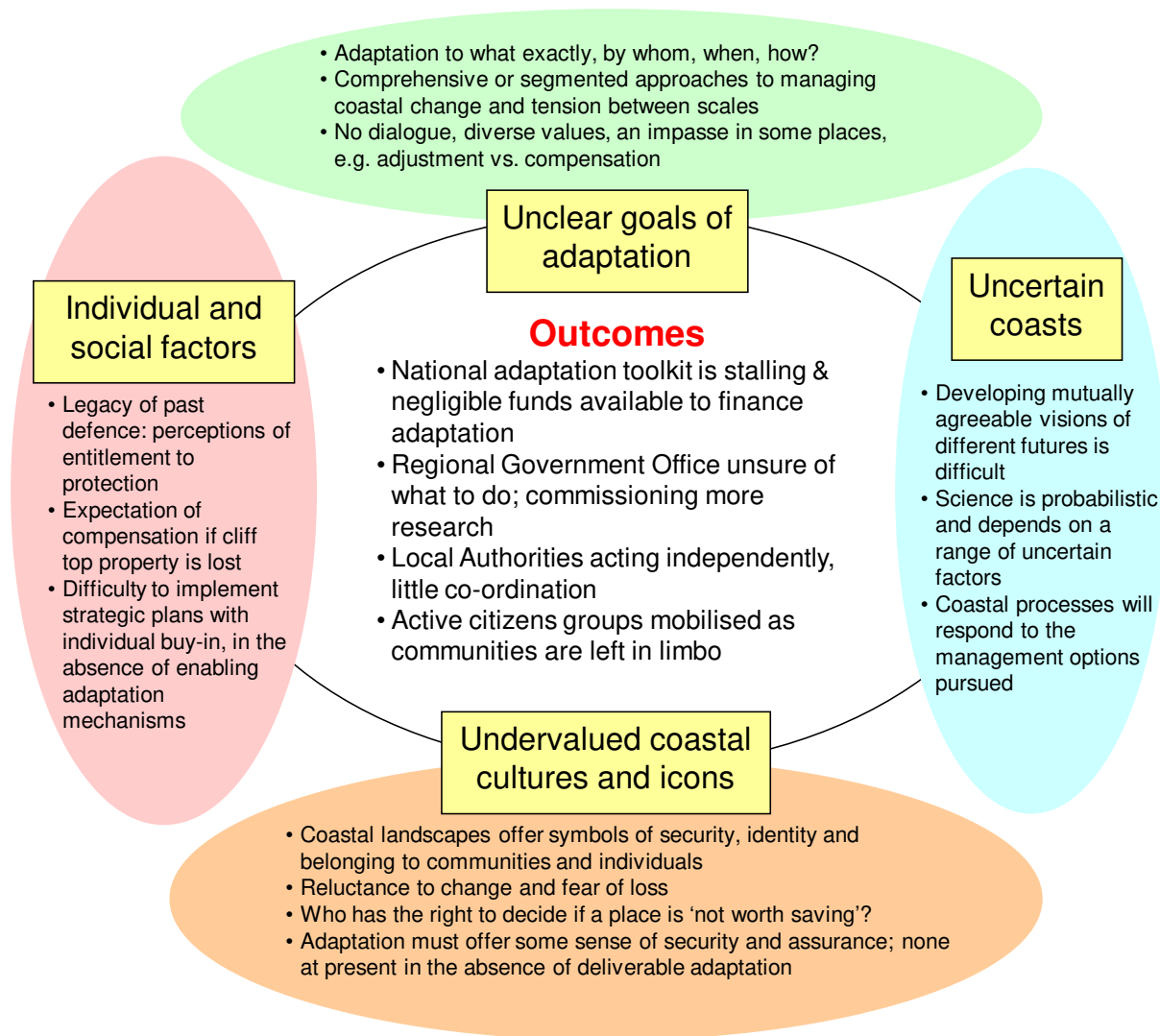
Source: EEA; ETC/SIA, based on Corine Land Cover (2006).

Source: European Environment Agency 2013, Report "Balancing the future of Europe's coasts"

Figure 2.5 Main trends in Europe's coastal wetland and water area, 2000–2006



Source: EEA; ETC/SIA, based on Corine Land Cover (2006).



Adaptive coastal governance

○ Recognition of risk

- Critical analysis of future risk
- Strategic intervention in planning and insurance cover

○ Proactive preparedness

- Shoreline management plans
- Coastal consultative forums

Norfolk and Portuguese research on adaptive coastal governance

- **Propensity**
 - Common perception of coastal risk
- **Engaged science**
 - Shared understanding of coastal change science
- **Trust**
 - Expectations of joint understanding of economic resilience, social fairness, unified and predictable policy
- **Learning**
 - Procedures for continuous and creative learning over designing a future coast to enhance a future economy and create a new coastal landscape culture

Key issues for designing future coastal landscapes

- Shared meaning of existing **identity** and belonging
- Use of images for designing **resilience** and beloved new coasts
- Realistic assessments of ecological reconstruction and **cost-effectiveness**
- Citizen **monitoring** of coastal change via smart phone photos



Environment Agency



Sea Palling Reefs





Flood wall improvements



Shoreline Management Plans and PPS 25

- Hold the line or advance the line
- No active intervention
- Managed realignment

- **Limited planning powers**
 - Uncertain commitments
 - Weak on adaptation

SMP6 POLICY
UNIT 6.06

Overstrand

Map



Indicative 100 year coastline under different management scenarios

..... SMP Unit boundaries — SMP6 Scenario — Modified SMP6 Scenario — SMP6 with Sediment Nourishment Scenario

Source: Environment Agency
(Shoreline Management Plan, Kelling Hard to Lowestoft Ness)

Pathfinder Programme

2009-2011

- £11 million
- 15 local authorities involved
- Emphasis on roll back and buy/lease-back
- Community engagement and constructive lessons learnt
- Offsetting planning permissions beyond existing housing envelopes
- Budget diversion
- Currently below LA radars
- Coastal community funds add-on



Happisburgh

Environment Agency

Insurance for coastal risk

Flood-re

- Coastal defence budget of £2.5 billion to 2015
- Between 500 000 and 1 million properties at risk to 2080
- Flood-re agreements between De fra and the Association of British Insurers
- 500 000 properties covered:
6 million at risk
- £180 million raised from £10.50 flood risk levy on each property, based on 1 in 100 risk
- No capacity for climate change adaptation

Lowestoft



(c) 17 February 2008 Mike Page

Case studies in Portugal

Three critical stretches in the country

- Coastal erosion
- Vulnerability to climate change
- Socio-economic conditions
 - Recent and rapid urban growth
 - Seasonal occupancy



Central Region



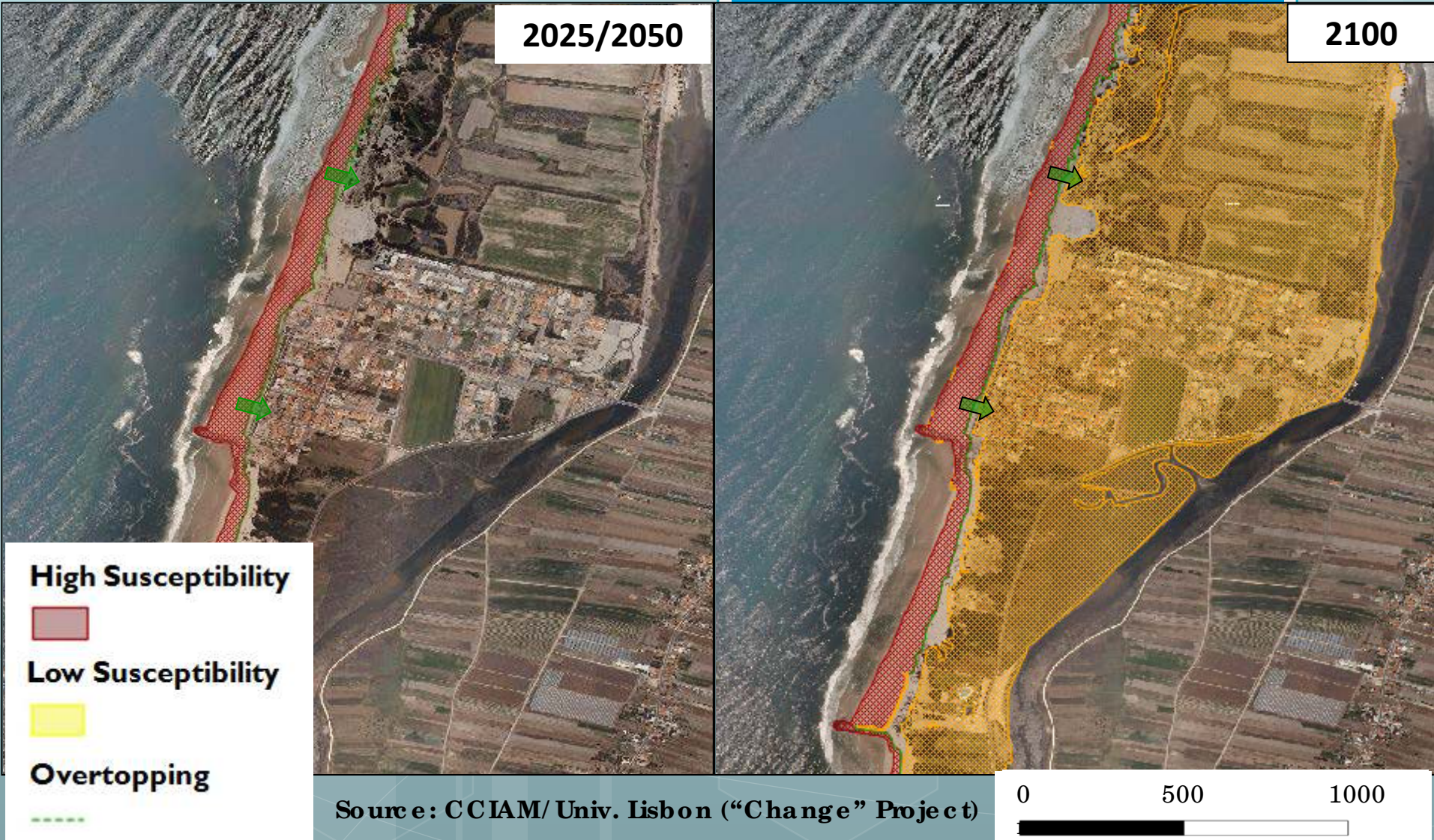
Lisbon Metropolitan Area



Touristic Algarve



Vagueira





Vagueira **4th November 2011**

Source: SIARL/DGT





Costa da Caparica March 2007



Source: ~~Exp~~re sso

Happisburgh



Overstrand

Before



After





28.02.2004 (c) Mike Page

Happpisburgh



H a p p i s b u r g h

Coastal flood insurance for appreciated coastal landscapes

- Build-in for coastal adaptation for 1 in 250 risk
- **Property levy** on future economic gains from adaptive coastal planning
- **Constructive coastal forums** to ensure fairness of treatment
- **Testing for community solidarity**
- **Shared learning** for shared coastal futures



Galé, Algarve, Portugal